

1) Knowledge and understanding:

Retrieval Practice (RP) is a pedagogical strategy which involves recalling knowledge and skills from within the curriculum. This is an extremely important skill in Geography as the discipline requires the application of a broad knowledge and skills base. RP is arguably an integral part of the overall learning process, and has subsequently been a fundamental element of professional development in lesson planning and delivery. This is reinforced by Ofsted, to whom stated that RP is an 'essential' part of the learning process (Ofsted, 2021).

2) Theory (The Testing Effect):

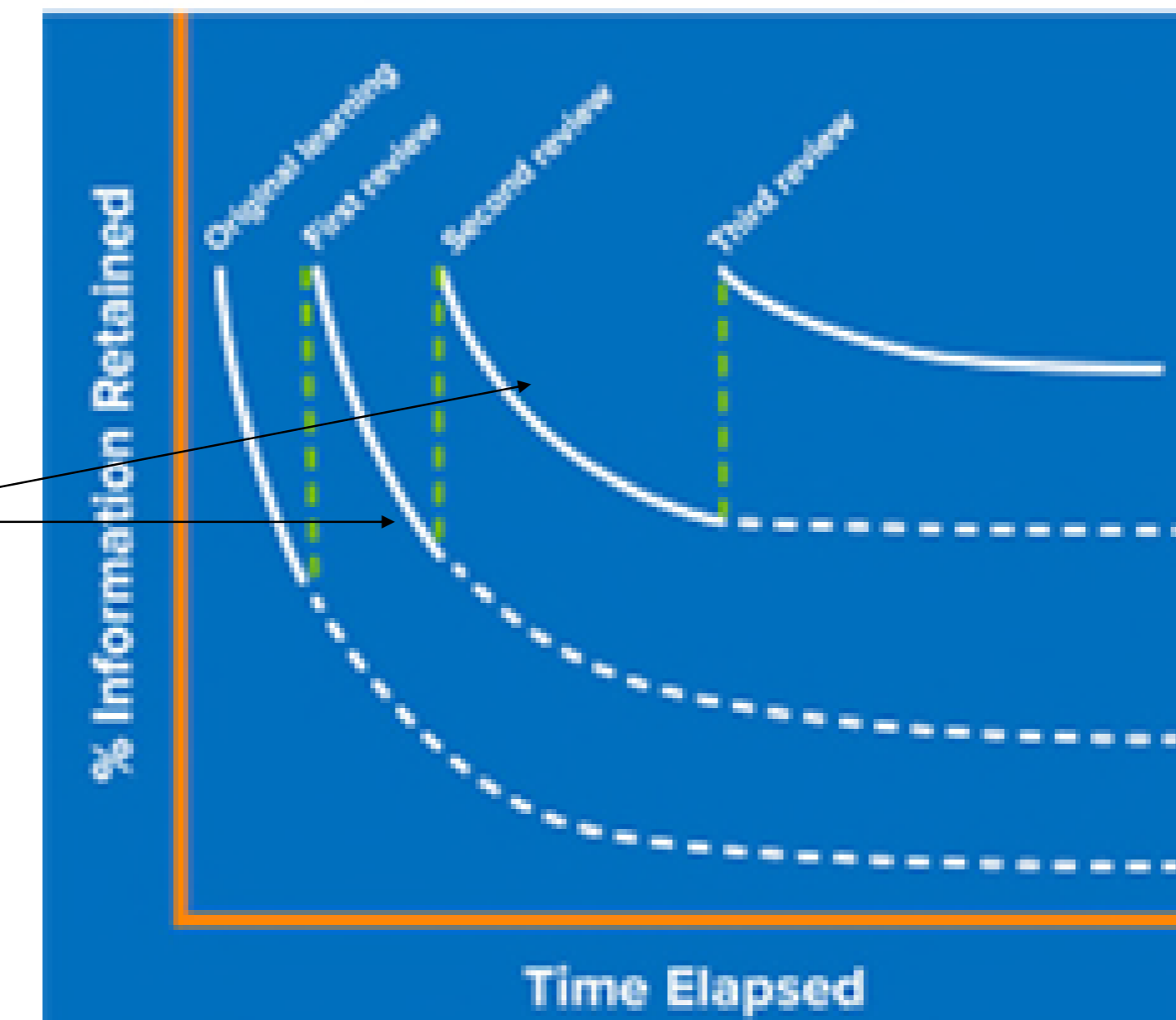
The Testing Effect is a highly established theory which was perpetuated by Karpicke and Blunt (2011). Their theory indicates that if learners participate in a testing process during phases of learning, then it is easier to facilitate the retrieval of knowledge from the long-term memory Dutke et al. (2017). This theory is highly applicable to geography, with a particular emphasis on two sections of the Geography Curriculum:

- Application of numeracy skills
- Longer answer essay questions

2) Theory (Forgetting Curve):

The Forgetting Curve is an experimental psychological theory perpetuated by Ebbinghaus. The theory discusses how repeated exposure to previously taught content can serve to improve long-term memory (Ebbinghaus, 1913). Contemporary studies into RP activities have noted that more complex knowledge and skills based RP activities will require a greater frequency of repetition – this notion is critical in teaching the Geography Curriculum.

Figure 1: is an example of the Forgetting Curve. It can be seen that at each retrieval interval, the percentage of knowledge retained increases (MindTools, n.d.)



6) Creation:

Agarwal et al. (2012) discusses the importance of differentiating between varying abilities in the cohort. This is an important future step when planning future RP activities. Furthermore, it will also ensure consistent alignment to **TS1, TS5, TS6 and TS7**

In addition, as reinforced by Butler and Roediger (2007), the Testing Effect, could be strongly backed-up by comprehensive feedback, especially when learners have been attempting multiple choice based questions, as it is relatively easy to develop misconceptions. Overall, retrieval practice has been a highly effective method of active learning, but it does create some notable issues within Geography.

5) Evaluation:

Agarwal et al. (2012) discusses the importance of using retrieval practice to not only enhance learner long-term memory but also enhancing the professional development of practitioners, as it creates an opportunity for classroom adaptation.

Outcomes align to the Testing Theory as well as the Forgetting Curve. Over a longer temporal period, learners were able to apply their knowledge when similar retrieval questions were posed during the course of a Scheme of Work.

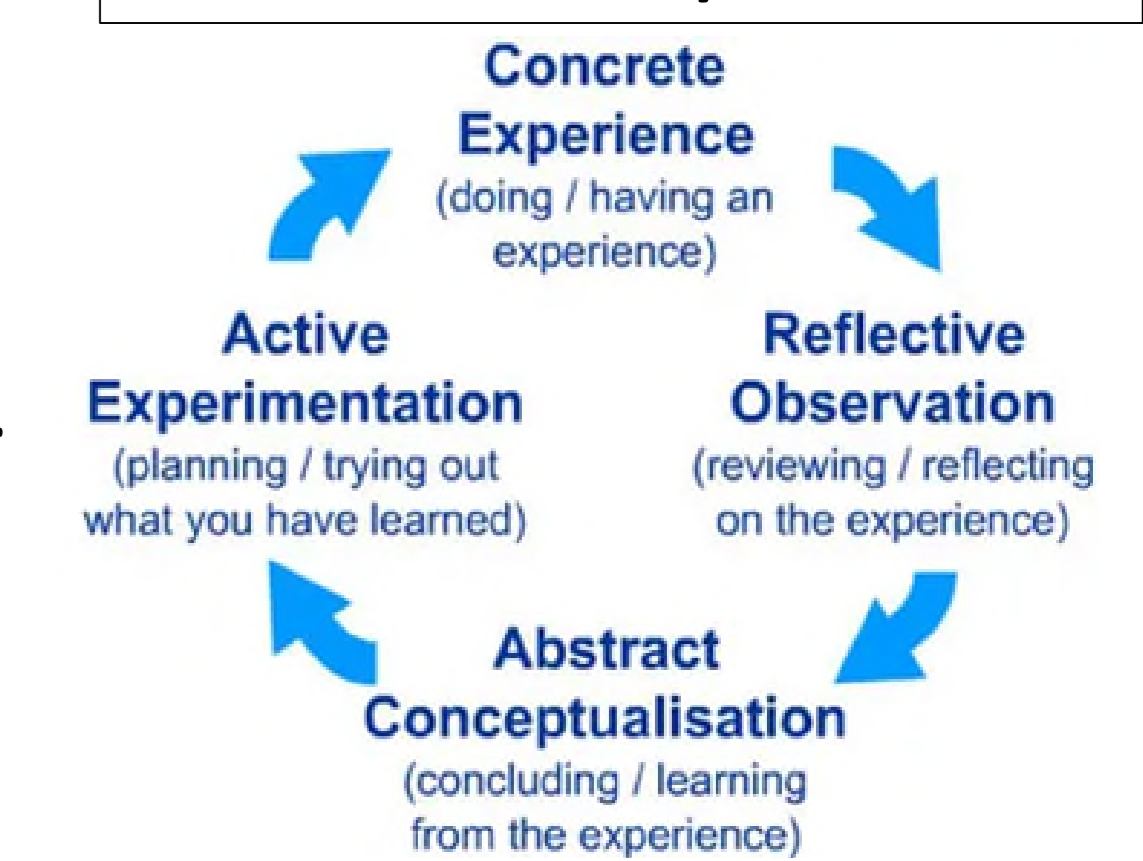
What Went Well:

- Learners were able to develop their knowledge and understanding through an active learning environment.
- After numerous review activities over a longer temporal period, learners were able to retain more information, and embed core geographical knowledge and skills into their long-term memory.
- They were also able to self-reflect and think critically about their own learning journey as well as their relative level of performance.

Even Better If:

- During the review activity, the quality of work produced varied significantly, with some learners only producing minimal responses and others struggling to access the task itself.
- By gathering empirical evidence, it has been noted that retrieval practice can have a considerable impact on progress practitioners can make through the curriculum – this will therefore require careful long-term planning (Carpenter, Endres and Hui, 2020)
- Due to significant time constraints in the lesson, it was challenging to stretch all learners and accurately tailor each task to individual abilities and consistently monitor progress.

Figure 4: Kolb's model of reflective practice (Mcleod, 2017)



3) Classroom Practice:

RP has been a pedagogical strategy implemented since the beginning of the training year. At the beginning of every lesson, a review activity usually posed as a 'Geog your memory' task is presented to the learners, with each review question aligning to areas of strength and weakness across the cohort.

Figure 2 below is an example of a retrieval activity that is specifically tailored towards the Key Stage 3 (KS3) Geography Curriculum.

Figure 3 to the right shows an example of a learners response to the retrieval activity. For small-scale review activities, learners would align to the following marking format:

- Self-assessed work
- Learners would be required to mark their work in red pen.
- This would serve to enhance understanding as well as knowledge

Figure 2: Example of retrieval questions.

LQ: What is Globalisation? **Date: 09 March 2021**

Do now: Complete the 'GEOG your memory' and skills task

G	What is Antarctic Treaty?
E	Explain how 1 plant has adapted to surviving in cold environments
O	Identify 3 challenges of urbanisation
G	How much did the Nepal Earthquake cost?

Identify a country with more than 25000 m³ per year of water

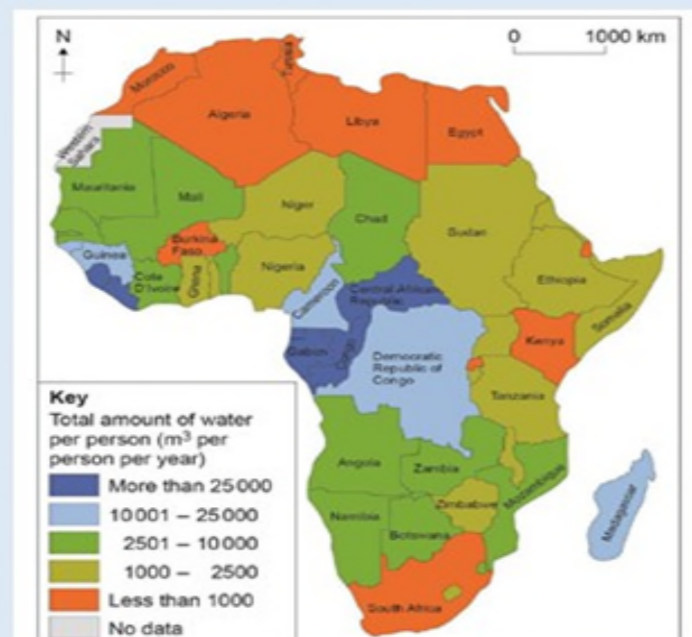
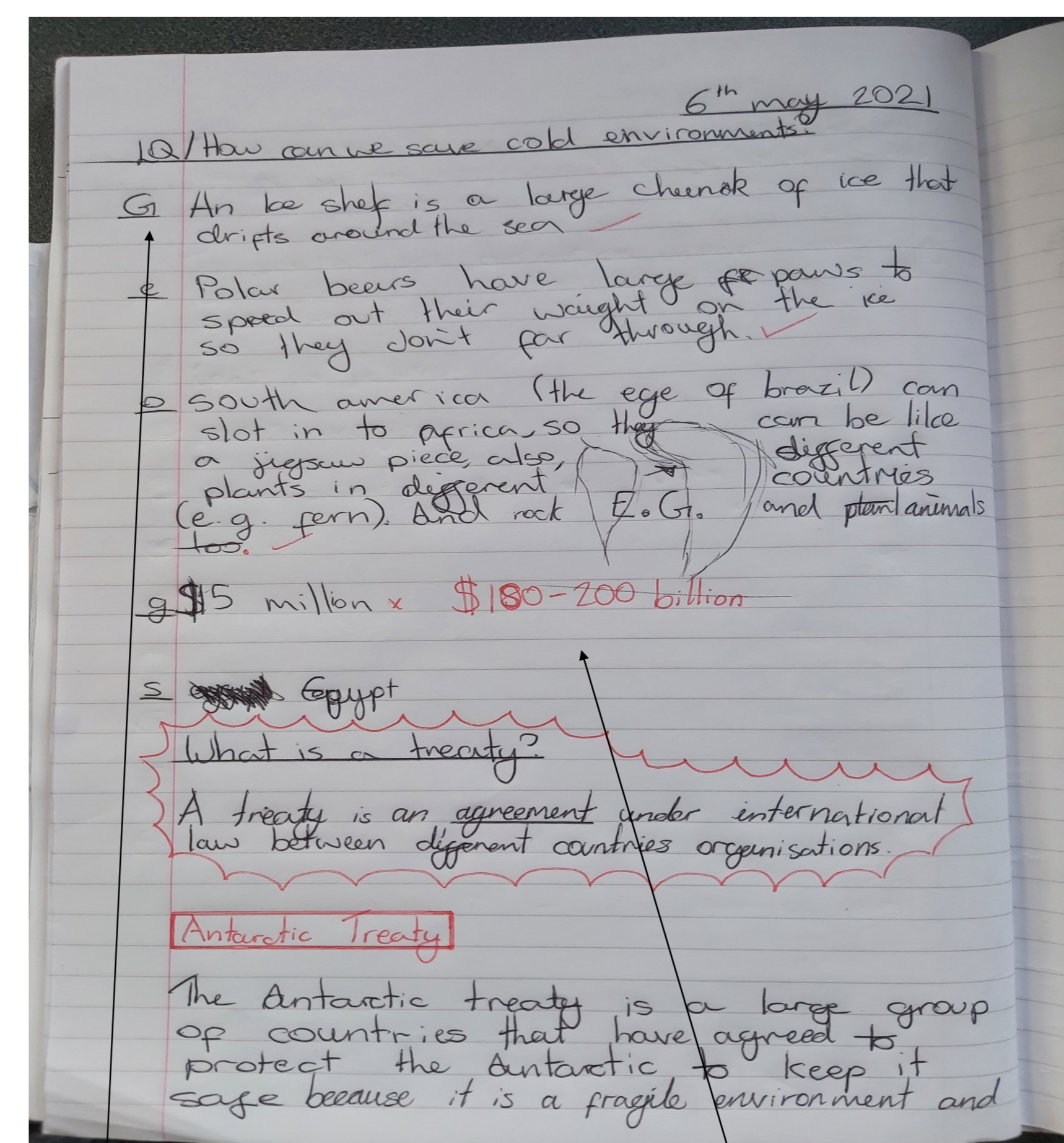


Figure 3: Example of learner response.



Examples of GEOG review format

Examples of self-assessed work, using red pens.

4) Discussion of classroom practice:

The RP activities were used consistently throughout each lesson and across all year groups. Overall, the outcomes to these tasks were very strong, for example:

- Learners were able to accurately recall information and use geographical skills to interpret maps, graphs and raw data.
- From a practitioner perspective, the review activities provided a subtle Assessment for Learning (AfL) point, which proved vital in reducing a sense of learner 'test expectancy', thus providing genuine results whilst minimising learner pressure.

However, there were some challenges with implementing RP in the classroom. These challenges were particularly pertinent with the KS3 cohort of learners.

- Some low-ability (LA) and disengaged learners struggled to engage with the retrieval tasks, thus rendering the retrieval activity ineffective for a minority of learners.

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